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Attorney Docket No. 073600.P022

PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

HB

In re Application of:

**Ueno et al.**

Serial No.: 09/479,267

Filing Date: January 6, 2000

For: SPIN VALVE  
MAGNETORESISTANCE SENSOR  
AND THIN FILM MAGNETIC HEAD

Examiner: Brian E. Miller

Art Unit: 2652

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**Supplemental Appeal Brief**

Hon. Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

Applicant (Appellant) hereby respectfully submits this Supplemental Appeal Brief (in triplicate) in connection with the above-referenced application on appeal to the Board of Patent Appeals and Interferences. In an Office Action mailed April 3, 2002, the Examiner sets forth a new ground of rejection made in response to the Appeal Brief filed by Appellant on January 16, 2002. In reply, Appellant respectfully requests reinstatement of the appeal. In compliance with 37 CFR § 1.192(c), Appellant respectfully submits this supplemental paper providing statements pertaining to the new ground of rejection.

**I. Examiner's New Ground Of Rejection**

In an Office Action dated April 3, 2002, the Examiner raised a new ground of rejection; namely, that Claims 1-4 are unpatentable under 35 U.S.C. § 103(a) as obvious over Aoshima (U.S. Patent 6,046,892) in view of Iwasaki et al. (U.S. Patent 6,157,525).

**II. Claims 1- 4 Would not have Been Obvious To A Person Of Ordinary Skill At The Time Of Applicant's Invention**

Claims 1-4 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Aoshima (U.S. Patent 6,046,892) in view of Iwasaki et al. (U.S. Patent 6,157,525). Appellant respectfully submits that a *prima facie* case of obviousness does not exist with respect to the rejection of claim 1 and respectfully traverses the rejection of claims 1 for lack of *prima facie* obviousness.

Aoshima discloses a spin valve magnetoresistance sensor 20, as shown primarily in Figs. 4 and 5, including: a base layer 21 and 22 layered on top of a substrate (not shown, see col. 3, line 3); the base layer including a first base film 21 having a nonmagnetic metal (i.e., Ta), and a second base film 22 having an alloy represented by NiFeX wherein X includes one of Cr, Nb and Rh, (i.e., NiFeCr), the second base film having a face-centered cubic (fcc) structure and a (111) orientation. Aoshima does not teach, disclose, or suggest a second base film having a fcc structure and (111) orientation as is recited in exemplary claim 1. Aoshima, to the contrary, is expressly silent as to this specific orientation.

Iwasaki is cited as disclosing "that NiFeCr has an fcc structure and (111) orientation (column 8, lines 32-36)." From this teaching, the Examiner states that it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the NiFeCR film disclosed in Aoshima to have had a fcc structure and (111) orientation, as taught by Iwasaki et al.

Appellant respectfully disagrees and submits that the Examiner's citation of this single sentence in Iwasaki is taken out of context. Furthermore, it would not have provided any motivation or suggestion to an ordinary practitioner to arrive at the present invention. A single line in a prior art reference should not be taken out of context and relied upon with the benefit of hindsight to show obviousness.

*Bausch & Lomb, Inc. v. Barnes-Hind Hydrocurve, Inc.*, 796 F.2d 443, 230 USPQ. 416 (Fed. Cir. 1986).

Iwasaki fails to disclose a NiFeCr film with an fcc structure and a (111) orientation. Instead, Iwasaki discloses that if a metal film is disposed on top of a Co based amorphous film, which is itself on top of an fcc magnetic film, that the underlying fcc magnetic film promotes the fcc (111) orientation of the metal film on top of the Co (Iwasaki, column 8, lines 32-36). This is analogous to saying that a first magnet with an exposed North pole promotes a second magnet (brought close to it) to orient its South pole with the exposed North pole. This does not mean that the second magnet on its own will orient this same way. Nor does it mean that if the second magnet happens to orient its South pole toward the first magnet that the first underlying magnet must have its North pole toward it.

As is known in the art, the orientation of a crystal lattice structure is dependent on a variety of factors. These factors include energy states, external forces, whether the material is epitaxially grown, sputtered, when nucleation occurs, temperature, rate of cooling, etc., and the underlying surface on which it

forms. But none of these factors implies that a film, simply by the nature of its composition, will assume a specific orientation.

The Examiner states that "the fcc structure in an (111) orientation is known to have a highly orientated crystal structure while no magnetic anisotropy appears in this orientation." The Examiner contends that these favorable characteristics would have been realized by a skilled artisan. Appellant respectfully disagrees. Appellant contends that Aoshima and Iwasaki could only have been combined in the manner suggested by the Examiner through carefully considered hindsight using the present invention as a reconstructive guide. It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art in order to render the claimed invention obvious. *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992). Appellant respectfully submits that the Examiner has used the patentee's claims as a "blueprint" in order to combine the right prior art references in the right ways to achieve the result of the claims in suit. When prior art references require selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight obtained from the invention itself. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 227 USPQ 543 (Fed. Cir. 1985).

Aoshima does not show, disclose, or suggest an fcc structure and a (111) orientation. Nor does the Iwasaki reference disclose or suggest the invention set forth in Appellant's claim 1. Aoshima teaches a specific layering of materials in his Figure 5. Iwasaki discloses a method for using a lower film to promote an orientation of an upper film. Iwasaki does not teach that if the upper film has

this orientation, then the lower film must necessarily have a specific orientation. Furthermore, there is nothing in either reference that suggests the combination of the two references in the manner described by the Examiner. That is, there is no teaching in the prior art that would have lead one of ordinary skill to combine the Aoshima and Iawasaki references so as to arrive at the claimed invention.

Appellant respectfully submits that the Office Action confuses structure and orientation. Structure does not necessarily imply a specific orientation. What the Examiner is attempting to assert is that an fcc structure necessarily produces a (111) orientation. A face centered cubic (fcc) as is well known, has four atoms per unit cell, six 1/2 atoms on each face, and eight 1/8 atoms at the corners. Additionally, the close-packed direction is (110). Importantly, these structural characteristics are completely independent of any orientation.

It is the burden of the Examiner to set forth a *prima facie* case of obviousness. To carry this burden, the Examiner must establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. *In re Sernaker*, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). There has not been a *prima facie* showing in this case. The Examiner may not rely upon a claim of inherency to establish a *prima facie* case of obviousness.

For all of the foregoing reasons, it is respectfully submitted that the rejection of claims 1-4 does not satisfy the criteria to establish *prima facie* obviousness.

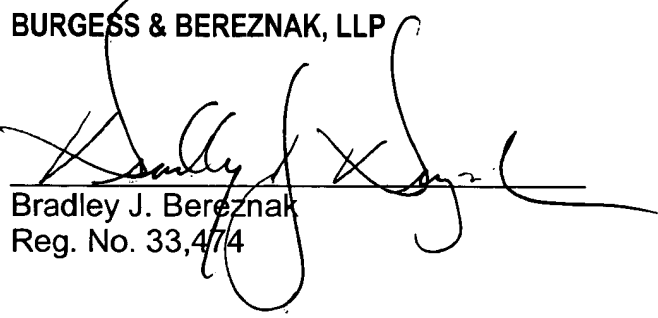
Accordingly, Appellant respectfully requests that the rejection of claims 1-4 under 35 U.S.C. § 103(a) be withdrawn. Appellant respectfully submits that all pending claims are now in condition for allowance.

Please charge any shortages and credit any overcharges to our Deposit Account No. 50-2060.

This supplemental paper is submitted in triplicate. Please charge any shortages and credit any overages to our deposit account number 50-2060.

Respectfully submitted,  
**BURGESS & BEREZNAK, LLP**

Date: June 26, 2002

  
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**EXPRESS MAILING CERTIFICATE**

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail No. EU213827475 US in envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on June 26, 2002 27, 2002.

  
Caitlin R. Burgess

June 27, 2002  
Date